

**WHAT IS CLAIMED IS:**

1. A system for visually displaying bottlenecks in a real-time, comprising:
  - an application integration platform that receives plural types of data from manufacturing and information systems, said application integration platform analyzing plural types of data to determine bottleneck conditions;
  - a process control server that receives said barcode and sensor information from at least one work center and forwards said barcode and sensor information to said application integration platform;
  - a database containing barcode and sensor information; and
- 10 a graphical user interface that interfaces with said application integration platform to provide a visual display of bottlenecks determined based on said barcode and sensor information.
2. The system recited in claim 1, wherein said application integration platform further determines key performance indicators, said key performance indicators including at least one of: throughput time, manufacturing hours, work center utilization, man-hour capacity, planned vs. actual hours for work orders, and work in process.
- 15 3. The system recited in claim 2, wherein said key performance indicators are determined in accordance with at least one of a work order number, a work station identifier, a start time, an end time, an activity code, a problem code, employee information, a material code, a planned start time, and a planned completion time.
- 20 4. The system recited in claim 1, wherein said graphical user interface further provides reports generated in response to user inputs, said user inputs including at least one of: a range of dates, a range of times, a selection of work station, a selection of work center, a selection of work unit, and an employee identifier.
- 25 5. The system recited in claim 1, wherein bottlenecks are identified in said graphical user interface in accordance with a level of utilization of a particular resource, and wherein a detailed information regarding said particular resource is displaying in response to a user request.

6. The system recited in claim 5, wherein a meantime between failure analysis is provided, and wherein user-selectable control parameters are provided to adjust said meantime between failure analysis.

5           7. The system recited in claim 5, wherein a work in progress analysis is provided.

8. A system for visually displaying manufacturing bottlenecks and real-time enterprise management information, comprising:

10         an application integration platform that receives plural types of data from manufacturing and information systems within an enterprise via a network infrastructure and analyzes said plural types of data in response to user inputs;

       a process control server that receives manufacturing data from at least one work center and forwards said manufacturing data to said application integration platform;

15         a database containing said manufacturing data; and

       a user interface that displays the analyzed plural types of data to determine bottlenecks and key performance indicators,

       wherein said at least one work center contains manufacturing machines, and a controller that receives said data from said barcodes and sensors associated with said manufacturing machines and communicates said barcode and sensor data to said process control server.

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       9. The system recited in claim 8, wherein said key performance indicators include at least one of: throughput time, manufacturing hours, work center utilization, man-hour capacity, planned vs. actual hours for work orders, and work in process.

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       10. The system recited in claim 8, wherein said key performance indicators are selected in accordance with differing classes of users and determined in accordance with at least one of a work order number, a work station identifier, a start time, an end time, an activity code, a problem code, employee information, a material code, a planned start time, and a planned completion time.

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11. The system recited in claim 10, wherein said user interface provides reports generated in response to: a range of dates, a range of times, a selection of work station, a selection of work center, a selection of work unit, and an employee identifier.

5        12. The system recited in claim 8, wherein bottlenecks are identified in said user interface in accordance with a level of utilization of a particular resource, and wherein a detailed information regarding said particular resource is displaying in response to a user request.

10      13. The system recited in claim 12, wherein a meantime between failure analysis is provided, and wherein user-selectable control parameters are provided to adjust said meantime between failure analysis.

14. The system recited in claim 12, wherein a work in progress analysis is provided.

15      15. A method of visually displaying bottleneck information in an enterprise manufacturing system, said method comprising:

obtaining barcode and sensor data from at least one work center having at least one manufacturing machine;

20      storing said barcode and sensor data in a database containing information related to manufacturing processes performed at said at least one work center;

analyzing said manufacturing data to determine key performance indicators and bottlenecks; and

presenting differing ones of said key performance indicators and bottlenecks to different classes of end users in accordance with user-selected input parameters.

25      16. The method of claim 15, wherein said key performance indicators include at least one of: throughput time, manufacturing hours, work center utilization, man-hour capacity, planned vs. actual hours for work orders, and work in process.

30      17. The method of claim 15, wherein said key performance indicators are determined in accordance with a selection of at least one of a work order number, a work station identifier, a

start time, an end time, an activity code, a problem code, employee information, a material code, a planned start time, and a planned completion time.

18. The method recited in claim 15, further comprising:

5 identifying bottlenecks in a graphical user interface in accordance with a level of utilization of a particular resource; and

providing additional information regarding said particular resource in response to a user request.

10 19. The method recited in claim 18, further comprising:

performing a meantime between failure analysis; and

providing user-selectable control parameters to adjust said meantime between failure analysis.

15 20. The method recited in claim 18, further comprising providing a work in progress analysis.